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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.		
10/586,830	07/20/2006	Hidenobu Hamada	MTS-3606US	8939		
52473	7590	08/13/2009	EXAMINER			
RATNERPRESTIA P.O. BOX 980 VALLEY FORGE, PA 19482				PETKOVSEK, DANIEL		
ART UNIT		PAPER NUMBER				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>
	10/586,830	HAMADA, HIDENOBU
	<b>Examiner</b>	<b>Art Unit</b>
	DANIEL PETKOVSEK	2874

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on the election dated June 10, 2009.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) 23-28 is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-22 and 29 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on July 20, 2006 is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____ .                                    |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>7/20/06; 10/10/07; 11/15/07</u> . | 5) <input type="checkbox"/> Notice of Informal Patent Application |
|  | 6) <input type="checkbox"/> Other: _____                          |

**DETAILED ACTION**

This office action is in response to the election filed June 10, 2009. In accordance with the election, claims 6-8 and 29 have also been amended. The amendments to the specification are acknowledged.

Claims 1-29 are pending (claims 23-28 withdrawn from consideration as being related to a non-elected group). It is noted by the Examiner that claims 23-28 should have the claim modifier of "Withdrawn" during further prosecution of this application. Correction is required in any response to this office action.

***Election/Restrictions***

1. Applicant's election **without** traverse of Group I, claims 1-22 and 29 in the reply filed on June 10, 2009 is acknowledged. Claims 23-28 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected group (method), there being no allowable generic or linking claim.

***Priority***

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file. This application is a 371 of PCT/JP04/18509.

***Information Disclosure Statement***

3. The prior art documents submitted by Applicant in the Information Disclosure Statements filed on July 20, 2006, October 10, 2007, and November 15, 2007, have been considered and made of record (note attached copy of forms PTO-1449).

***Claim Objections***

4. Claim 1 is objected to because of the following informalities: the sole independent claim appears to be a *translation* from a foreign (JP) patent document. This claim does not read well and includes a number of relative frames of reference. Also, Applicant is requested to take care with claiming the singular and plural form of *member(s)*. Applicant is respectfully requested to re-draft claim 1 (and any informality uncovered in dependent claims 2-22 and 29) in response to this office action. Appropriate correction is required.

5. Claim 15 is objected to since the "predetermined location" of claim 15 is dependent upon a different "predetermined location" of claim 13. These claim limitations are inconsistent.

6. Further, Applicant may desire to re-draft claims 2-22 and 29 (including dependencies), since these claims appear to be based on a translation of a foreign patent document.

***Claim Rejections - 35 USC § 112***

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 2-22 and 29 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Regarding claim 2, and in view of sole pending independent claim 1, the claim language "wherein the distribution of the refractive index decreasing with a distance from the optical axis is the distribution of the refractive index decreasing in a direction other than the

direction of periodic placement of the second member" is vague and does not clearly define the invention. Claims 3-22 and 29 are dependent (directly or indirectly) from claim 2. Correction is required.

9. At this point in prosecution, the foreign translation and wording makes a clear, concise examination of dependent claims 3-22 and 29 impossible and inefficient. Claims 1 and 2 will be examined to uncover the closest prior art of record. Claims 3-22 and 29 depend from claim 2.

***Claim Rejections - 35 USC § 102***

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

11. Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 2003-240989.

JP 2003-240989 teaches (ABS; Figures 8, 9b, 11, and 15; paragraph [0143]) an optical device which includes a photonic crystal comprising: a first member(s) which has a distribution of refractive index decreasing with distance from an optical axis along a first direction perpendicular to the optical axis; and a

second member(s) which is substantially periodically placed within the first member and along a second direction different from the first direction, which clearly, fully meets Applicant's claimed structural limitations for sole pending independent claim 1.

Regarding claim 2, the distribution of the refractive index is decreasing in a direction other than the direction of periodic placement of the second member.

12. Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 2002-365599.

JP 2002-365599 teaches (ABS; Figure 9; paragraph [0035]) an optical device which includes a photonic crystal comprising: a first member(s) which has a distribution of refractive index decreasing with distance from an optical axis along a first direction perpendicular to the optical axis; and a second member(s) which is substantially periodically placed within the first member and along a second direction different from the first direction, which clearly, fully meets Applicant's claimed structural limitations for sole pending independent claim 1.

Regarding claim 2, the distribution of the refractive index is decreasing in a direction other than the direction of periodic placement of the second member.

13. Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by Charlton et al. NPL.

Charlton et al. NPL teaches (ABS; pages 155-165; Figure 12) an optical device which includes a photonic crystal comprising: a first member(s) which has

a distribution of refractive index decreasing with distance from an optical axis along a first direction perpendicular to the optical axis; and a second member(s) which is substantially periodically placed within the first member and along a second direction different from the first direction, which clearly, fully meets Applicant's claimed structural limitations for sole pending independent claim 1.

Regarding claim 2, the distribution of the refractive index is decreasing in a direction other than the direction of periodic placement of the second member.

14. Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by Johnson et al. NPL.

Johnson et al. NPL teaches (Intro; Figure 8, Conclusion) an optical device which includes a photonic crystal comprising: a first member(s) which has a distribution of refractive index decreasing with distance from an optical axis along a first direction perpendicular to the optical axis; and a second member(s) which is substantially periodically placed within the first member and along a second direction different from the first direction, which clearly, fully meets Applicant's claimed structural limitations for sole pending independent claim 1.

Regarding claim 2, the distribution of the refractive index is decreasing in a direction other than the direction of periodic placement of the second member.

15. Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by Weisbuch et al. NPL.

Weisbuch et al. NPL teaches (Summary; pages 660-668; Figures 8 and 14) an optical device which includes a photonic crystal comprising: a first member(s) which has a distribution of refractive index decreasing with distance from an optical axis along a first direction perpendicular to the optical axis; and a second member(s) which is substantially periodically placed within the first member and along a second direction different from the first direction, which clearly, fully meets Applicant's claimed structural limitations for sole pending independent claim 1.

Regarding claim 2, the distribution of the refractive index is decreasing in a direction other than the direction of periodic placement of the second member.

16. Claims 1 and 2 are rejected under 35 U.S.C. 102(e) as being anticipated by Parker et al. US 2004/0067035 A1 (currently U.S.P. No. 7,162,132).

Parker et al. US 2004/0067035 A1 teaches (ABS; Figures 1-3 and 5) an optical device which includes a photonic crystal comprising: a first member(s) which has a distribution of refractive index decreasing with distance from an optical axis along a first direction perpendicular to the optical axis; and a second member(s) which is substantially periodically placed within the first member and along a second direction different from the first direction, which clearly, fully meets Applicant's claimed structural limitations for sole pending independent claim 1.

Regarding claim 2, the distribution of the refractive index is decreasing in a direction other than the direction of periodic placement of the second member.

17. Claims 1 and 2 are rejected under 35 U.S.C. 102(e) as being anticipated by Zoorob et al. US 2004/0086244 A1.

Zoorob et al. US 2004/0086244 A1 teaches (ABS; Figures 1, 2a, 2b, and 2c) an optical device which includes a photonic crystal comprising: a first member(s) which has a distribution of refractive index decreasing with distance from an optical axis along a first direction perpendicular to the optical axis; and a second member(s) which is substantially periodically placed within the first member and along a second direction different from the first direction, which clearly, fully meets Applicant's claimed structural limitations for sole pending independent claim 1.

Regarding claim 2, the distribution of the refractive index is decreasing in a direction other than the direction of periodic placement of the second member.

18. Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 2001-337236.

JP 2001-337236 teaches (ABS; Figures 7, 8, and 12) an optical device which includes a photonic crystal comprising: a first member(s) which has a distribution of refractive index decreasing with distance from an optical axis along a first direction perpendicular to the optical axis; and a second member(s) which is substantially periodically placed within the first member and along a second direction different from the first direction, which clearly, fully meets Applicant's claimed structural limitations for sole pending independent claim 1.

Regarding claim 2, the distribution of the refractive index is decreasing in a direction other than the direction of periodic placement of the second member.

***Conclusion***

19. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: PTO-892 form references A-E.

20. Any inquiry concerning this communication or earlier communications from the examiner should be directed to DANIEL PETKOVSEK whose telephone number is (571) 272-4174. The examiner can normally be reached on M-F 8:30-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Uyen Chau Le can be reached on (571) 272-2397. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Daniel Petkovsek/  
Patent Examiner, Art Unit 2874  
August 12, 2009